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(54) Bird and animal scares

(57) A method and apparatus for protecting plants and crops from attack by birds and other animals such as mice comprising providing flexible strip material mounted on suitable support members in the region of the growing plants or crops. The strip material is light in weight and mounted so as to be freely movable in the prevailing wind. The strip material may be in the form of a tape provided

with a bright or shiny appearance. The tape may be treated with a highly reflective or luminous composition on one or both sides of the tape. Opposite sides of the tape may be of different colours. For example, the tape may have a highly reflective orange-coloured appearance similar to that of so-called hazard or warning tape used on vehicles. The bright appearance of the tape and its constant movement in the lightest wind has a deterrent effect on birds and other crop and seed eating animals.

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## SPECIFICATION

## Method and apparatus for protecting plants and crops

This invention relates to a method for  
 5 protecting plants and crops, including seeds and seedlings, from attack by birds. The method may also be effective to provide a degree of protection for such plants and crops against attack by other animals such as mice. The invention also provides  
 10 apparatus for performing the method of the invention.

The invention is particularly suitable for use in private gardens, allotments, and horticulture generally. However, the invention may also be  
 15 applicable to certain aspects of agriculture.

The problem of protecting crops and other plants (whether at the newly-sown seed stage, or later in the growing cycle) is of course one of the oldest problems known to human communities,  
 20 and many proposals have been made of devices for deterring birds from attacking seeds and growing plants.

Such proposals include the scarecrow, the use of intermittent explosions, wind-driven rotatable  
 25 devices, which are all intended to frighten birds away as opposed to physically preventing them from reaching the plants or seeds. Then there are the devices which, while not in the main seeking to frighten the birds simply provide a barrier  
 30 around the growing crop. Such devices include the use of cotton, netting, and even total enclosure of the crop by means of a cage.

Experience has shown that existing methods of protecting plants and crops are all unsatisfactory  
 35 in one important respect or another, at least for horticultural operations. For example, the devices which are intended to scare birds away are found to be either not very effective in deterring the activities of birds, and/or to be tedious and time-  
 40 wasting as regards setting them up in the desired position in the first place. Moreover, many such devices are easily damaged in rough weather and are not readily dismantled, stored and made available for convenient re-use.

In addition, many such devices are too expensive for widespread use in gardens and allotments. This is particularly true in relation to the use of netting and enclosed cages.

It is clear therefore that there is a significant  
 50 and long-felt need for the provision of a method and apparatus for protecting plants and crops, including seeds and seedlings, from attack by birds, and offering improvements over currently available devices. Such improvements include  
 55 reduced cost, extended working life, ease of use, and effectiveness in deterring birds from attacking the protected crops and plants.

An object of the present invention is to provide a method and apparatus for protecting plants and  
 60 crops including seeds and seedlings, from attack by birds and providing one or more of the improvements identified in the preceding paragraph.

According to the invention there is provided a

65 method of protecting plants and crops, including seeds and seedlings, comprising the steps of: providing one or more plants or seeds or seedlings in contact with soil or other growing medium;

70 before or after providing such plant or seed or seedling in contact with said growing medium, mounting over or adjacent the plant or seed or seedling, a bird scaring device;

the bird scaring device comprising a length of  
 75 strip material mounted so as to be freely movable under the action of wind; and

permitting the plant or seed or seedling to develop and grow while said strip material moves in the prevailing wind and thereby deters birds.

80 Preferably the strip material is flexible. The strip material may be in the form of a tape of any suitable width from a few millimetres upwards.

The tape preferably has a bright or shiny appearance. The tape may be treated with a highly  
 85 reflective or luminous composition on one or both sides of the tape. The colour of the tape on its opposite sides may be different. Preferably, at least one side of the tape has a highly reflective orange-coloured appearance. The other side of the

90 tape may have a highly reflective green appearance. An example of a currently available tape suitable for the purpose of the invention is the so-called hazard or warning tape used on vehicles and elsewhere to provide a highly-  
 95 reflective surface which is highly visible at night in car headlights.

The tape itself may be of woven form and treated on its opposite surfaces with suitable compositions to provide a bright or shiny  
 100 appearance. Alternatively, the tape may be of any other suitable material, such as plastic strip material. Preferably, the tape has sufficient tensile strength so as not to be easily broken by high winds, nor by careless handling during setting up  
 105 operations.

The strip material may be mounted in any suitable way over or adjacent the plants or crops so as to be freely movable in the wind. Preferably, the strip material is secured at its opposite ends  
 110 between a pair of upright supports, such as bamboo canes. The strip material may be simply tied to the canes and extend in a catenary between the canes so as to move freely in the wind. The height of the strip material in relation to the growing plant or crop is a matter of choice for the individual gardener or horticulturist.

The strip material may be twisted a number of times prior to being secured to the upright supports, so that it has a generally helical form  
 120 between the two supports. In this way, the wind can perform a twisting action on the strip material, so that it twists alternately in opposite directions. This effect is particularly beneficial in the case where the strip material is provided with surface finishes of different colours on its opposite sides.

125 Two or more lengths of strip material may be provided in relation to a given row or area of plants or crop. The lengths of strip material may be arranged parallel to each other or at any suitable

inclination or, indeed, in an overlapping criss-cross pattern.

An embodiment of the invention will now be described by way of example.

5 In this embodiment, the plant or crop material is provided in the form of seeds of lettuce which are sown in the soil, in accordance with well known horticultural practices. It is to be noted that the method of the invention is equally applicable  
10 to any other plant or crop material requiring protection from birds, such as young seedlings.

The next step in the method of the invention is the provision of a bird scaring device which is mounted over or adjacent the row or rows of  
15 lettuce seeds which have been sown. In this embodiment, the bird scaring device is installed after the sowing of the seeds since this is more convenient because the device is mounted close to and above the seeds. However, it is not always  
20 essential for the bird scaring device to be so closely positioned in relation to the crop and in such circumstances the device can be installed prior to sowing or planting.

The bird scaring device comprises strip material  
25 mounted above the rows of seeds so as to be freely movable by the wind.

The strip material is in the form of a tape or ribbon treated with a highly reflective composition so as to have a bright or shiny appearance. The  
30 tape is relatively light in weight and flexible so as to be freely movable in the wind. An example of a material suitable for this use is tape currently available as hazard warning tape. Use of tape treated with a luminous composition has been  
35 found to be particularly effective.

A pair of upright supports, in the form of bamboo canes, are provided, one at each end of the row of lettuce seeds. The strip material or tape extends between the supports in the usual  
40 catenary form so as to be readily blown to and fro by the wind. The tape may be twisted into a helix between the supports.

At each end of the tape, it is secured to the respective support in any convenient way such as  
45 by being itself formed into a knot or loop engageable with the support, or by means of string or any other fastener. A length-adjustable securing system could be provided comprising a metal ring securable to the support and through  
50 which the tape is adjustably looped.

The tape is height-adjusted in relation to the soil level and the seeds are left to germinate and grow while the tape swings freely in the breeze or  
55 wind and presents an ever moving reflective surface which is found to be effective in deterring the approach of birds.

When the bird scaring device is no longer needed, it can be readily dismantled and the tape rolled up and stored ready for future use.

60 Among modifications which could be made in the above embodiment are changes in the colour, width and material of the tape. The tape may be provided with a shiny or bright metallic surface on one or both sides, or any part thereof. Where a  
65 reflective and/or luminous surface finish is

provided, such surface finish may be of any suitable modern reflex reflective material incorporating, for example, embedded particles whether of glass or other light transmitting or  
70 reflecting materials.

Likewise, many modifications can be made to the supports for the tape, including the use of supports having provision for the use of two or more closely spaced tapes extending lengthwise  
75 of the row of crop or seeds. In addition, the tape may be used in the form of short lengths secured (for example by tying) at spaced intervals to a length of string or cotton or other flexible tension member. The lengths of tape could be secured to  
80 the tension member by means of metallic swivels or the like whereby twisting and turning of the tape lengths relative to the tension member can freely occur. Also, such metallic swivels or the like can be used at one or both ends of a single length  
85 of tape extending between supports as described above.

Among the advantages provided by the embodiment of the invention described above are its low cost, its ease of erection, its virtual  
90 indestructibility, and its effectiveness as a deterrent to birds, due to its high visibility and constant movement in the lightest of breezes.

#### CLAIMS

1. Apparatus for protecting plants and crops  
95 including seeds and seedlings, comprising a length of strip material adapted to be mounted so as to be freely movable under the action of wind.

2. Apparatus according to claim 1 wherein said strip material is flexible.

100 3. Apparatus according to claim 2 wherein said strip material is in the form of a tape.

4. Apparatus according to claim 3 wherein at least part of the surface of said tape has a bright or shiny appearance.

105 5. Apparatus according to claim 4 wherein at least a portion of the surface of said tape is treated with a highly reflective or luminous composition.

6. Apparatus according to claim 5 wherein said tape is treated with said composition on both  
110 sides of the tape.

7. Apparatus according to claim 6 wherein the colour of said tape on one side of the tape is different to the colour of the tape on the other side thereof.

115 8. Apparatus according to any one of claims 2 to 7 wherein at least one side of said tape has a highly reflective orange-coloured appearance.

9. Apparatus according to claim 8 wherein the other side of the tape has a highly reflective green  
120 appearance.

10. Apparatus according to any one of the preceding claims comprising a pair of support members to be inserted into the ground or a growing medium to support said strip material.

125 11. Apparatus according to claim 10 wherein said strip material is twisted a number of times prior to being secured to said support members, so as to have a generally helical form between said support members.

12. Apparatus for protecting plants and crops, including seeds and seedlings, substantially as described herein.

- 5 13. A method of protecting plants and crops, including seeds and seedlings, comprising the steps of:  
providing one or more plants or seeds or seedlings in contact with soil or other sowing medium;  
10 before or after providing such plant or seed or

seedling in contact with said sowing medium, mounting over or adjacent the plant or seedling apparatus as claimed in any one of the preceding claims; and

- 15 permitting the plant or seed or seedling to develop and grow while the strip material of said apparatus moves in the prevailing wind.  
14. A method of protecting plants and crops, including seeds and seedlings, substantially as described herein.